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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,731	10/24/2003	Carlino Panzera	034497-025	2391

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EXAMINER
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DANIELS, MATTHEW J

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/693,731

Applicant(s)

PANZERA, CARLINO

Examiner

Matthew J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-12 and 17-46 is/are pending in the application.
- 4a) Of the above claim(s) 17-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-12 and 44-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. In the reply filed 21 July 2006, Claims 13-16 were cancelled, Claim 8 was amended, and new Claims 44-46 were presented.

#### *Double Patenting/Terminal Disclaimer*

2. The nonstatutory obviousness-type double patenting rejection set forth previously is withdrawn in view of the terminal disclaimer filed 21 July 2006.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 8** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no disclosure in the specification of a partially sintered ceramic material that is castable after partial sintering.

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4. **Claims 8 and 44** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **As to Claim 8**, the portions of this claim which read “partially sintered” and “castable or investment refractory” are contradictory to each other. In the Examiner’s interpretation, a ceramic material can no longer be “castable” after it has been partially sintered, which would fuse particles into a mass. **As to Claim 44**, Claim 8 includes a “castable or investment refractory ceramic material” and is “comprising” (1) a filler and (2) a bonding agent. Claim 44 is drawn to the castable or investment refractory material “comprises up to about 80% of the refractory filler” (emphasis added). However, the refractory filler is not comprised of the castable or investment refractory material in Claim 8. In the Examiner’s interpretation of Claim 8, the castable or investment refractory material is comprised of the refractory filler (i.e. the refractory filler is a constituent). Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 8-12 and 44** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hardy (J. of the European Ceramic Society, Vol. 15 (1995) pages 769-775).

**As to Claim 8**, Hardy teaches a blank fabricated from a partially sintered ceramic material wherein the partially sintered ceramic material is sintered to less than about 92% of theoretical full density (page 773, Fig. 5).

Hardy is silent to the intended use and to the ceramic material comprising a refractory filler and a bonding agent.

Firstly, the article of Hardy is inherently capable of fulfilling the claimed intended use. Secondly, it is the Examiner's position that by providing the same degree of partial sintering and porosity as claimed, that the claimed blank is anticipated. In the alternative, use of bonding agents is conventional in the art and would have been well known and prima facie obvious to the ordinary artisan. Applicant admits the "well known" use of binders on page 3, line 5 of the specification. The binder type is not claimed, and organic binders would "burn out" during the sintering process, resulting in an article having the same structure, composition, and porosity as that of Hardy.

**As to Claims 9 and 10**, Hardy teaches less than 75% theoretical density (page 773, Fig. 5). **As to Claims 11 and 12**, Hardy teaches a flexural strength of 3 to 20 MPa (Fig. 5, page 773). **As to Claim 44**, the Examiner's position is that the article of Claim 44 is the same or an obvious variation over the article of Hardy. This position is supported by Hardy's teaching of the same porosity and the same fracture strength as claimed in this application.

6. **Claims 8-12 and 44-45** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nanjangud (J. of the European Ceramic Society, Vol. 15 (1995) pages 655-660).

As to **Claim 8**, Nanjangud teaches a blank which could be used for the manufacture of a dental model fabricated from a partially sintered investment refractory ceramic material comprising a refractory filler and a bonding agent, wherein the partially sintered ceramic material is sintered to less than about 92% of theoretical full density (page 656, left column, Experimental Procedure, and page 657, Fig. 1).

As to **Claims 9-12**, see Nanjangud's teachings in Figures 1 and 7 (pages 657 and 658, respectively).

As to **Claim 44**, by teaching substantially the same sintering process, and producing the same level of porosity, the Examiner asserts that the article of Nanjangud is the same, or substantially the same, as the claimed article.

As to **Claim 45**, Nanjangud teaches silica (silica is the majority component of soda-lime glass, page 656, left column, Experimental Procedure).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claim 46** is rejected under 35 U.S.C. 103(a) as obvious over Nanjangud (J. of the European Ceramic Society, Vol. 15 (1995) pages 655-660) in view of Schwabe (USPN 5304239). Nanjangud teaches the subject matter of Claim 8 above under 35 USC 102(b), or in the alternative, under 35 USC 103(a). As to **Claim 46**, Nanjangud is silent to the claimed

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bonding agents. However, Schwabe teaches a bonding agent used with a ceramic agent comprising gypsum, phosphate, or ethyl silicate (2:23-26 and 1:40).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the binder of Schwabe into the method of making disclosed by Nanjangud to result at the claimed article because doing so would provide improved flow properties, improved wetting and dispersing, and a more favorable mixture of powder to liquid to the method of Nanjangud, which would result in better filling of the mold, better conformance to a mold, and better adherence of the powders (less breakage). Additionally, Applicant admits on page 3 of the specification at lines 20-21 that “These investment materials are commercially available and are widely useful in dental laboratories”, and one would have found it prima facie obvious to combine the binder of Schwabe into the method of Nanjangud because Nanjangud suggests a binder, and Schwabe provides a binder that is widely useful.

### ***Response to Arguments***

8. Applicant's arguments filed 21 July 2006 have been fully considered but they are not persuasive. The arguments appear to be on the grounds that Hardy fails to teach the intended use or a castable or investment refractory material.

9. However, these arguments are not persuasive because the article of Hardy is capable of performing the intended use, thus anticipating the claimed limitation. Additionally, “castable or investment refractory material” is drawn to the *method of making*, which does not necessarily affect the composition or structure of the resulting article. Organic binders, as Applicant acknowledges, are “well known” (specification, page 3, line 5), and would burn out or oxidize

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out of the formed mass during the ramp up to the sintering temperature. Thus, because the binders used in making the article would be removed at a later stage in the process, a partially sintered article having the same structural and compositional characteristics but lacking the claimed binder still anticipates the claimed article. Applicant bears the burden of distinguishing the claimed article from the prior art, but the use of a binder does not distinguish the structure or composition. Alternatively, in the rejection of Claim 46, a reference is provided and Applicant admits (page 5 of the specification) that other claimed bonding agents are known and widely used.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 8/4/06

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